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THE FUTURE OF MINING COUNTRIES: NEW STRATEGIES OR THE RESTRUCTURING OF THE STATE?

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1. SUMMARY AND CONCLUSIONS

1. The collapse of rent-earning state activities in a number of developing countries points to the necessity for renewed thinking about the nature of the State and of its role in the economy. The thesis of this paper is that the State structures resulting from the political economy of rent in the mining countries of the third world are not compatible with the development of capitalist enterprises.

2. This analysis suggests that the competitiveness of mining operations depends on the capacity of the State to separate the logic of mining production from regional social constraints or from a clientelist redistribution of the rent. Through various examples taken from non-fuel mineral exporting countries, the report compares the ways production and social activities are handled at the micro level by capitalist and "rent-earning" States. In particular, it is argued that a mineral state enterprise in a rent-earning context differs radically from a capitalist state enterprise: in the former, the mineral state enterprise is a part of the rent-earning State and not a capitalist enterprise with public ownership. In consequence, the restructuring of mineral state enterprises in the third world cannot be simply posed in terms of privatization. The central issue regards the conditions under which production can be separated from the welfare functions of the State.

3. The separation of production and welfare can only be envisioned in the mining industry if there is a political process aimed at restructuring the rent-earning State into a capitalist State. This separation should deal with the following issues:

- Transfer to State bodies of all the public services (medical care, education, police, army, transport, utilities, pensions, etc.) which had been assumed by the State enterprise. The difficulty is to ensure that the State bodies have both the technical skills and the financial means to assume these vital tasks;

- Restoration of a system of wages and prices allowing the monetarization of the services formerly produced by the state enterprise. In other words, it is necessary to create new local markets with a decentralized supply. This point is also difficult because it provokes a radical change in wages and in workers' mentalities;

- Division of productive activities into subsets which could survive as independent enterprises, and eventually, be capitalized through private investment, whether domestic or foreign.

4. This process, therefore, involves a wide and complex policy aimed at promoting industrial development. To attract capitalist investment, the conditions of the separation of production from other State burdens should be clear. It is only by rebuilding an

independent social infrastructure that the State can guarantee that the future business of the foreign investor will not be jeopardized by unbearable social constraints.

II. CHANGES IN NON-FUEL MINERAL MARKETS

A. The end of oligopolies

5. The pattern of growth of the mining and metals industries which prevailed until the end of the 1960s was based on the three following factors:

- a relatively uninterrupted growth in demand for ores and metals at an exponential rate, based essentially on the industrial dynamics of Fordist growth, the development of heavy industries and the production of capital goods;

- the discovery of richer or more accessible resources - thanks in particular to the development and internationalization of mineral exploration - which enabled some investments to be made on cost criteria, independently of short-term demand trends and even counter-cyclically;

- the ability of certain major operators to control prices, taking advantage of their dominant position to make short-term supply adjustments by using flexibly their production capacity. These producers were able to ride out the inevitable cyclical fluctuations in demand by reducing their sales in periods of recession and anticipating the upturn by undertaking counter-cyclical investment. The oligopolistic control of markets was possible because there existed a consensus among the producers (generally few in number on any given market) to maintain their respective market shares more or less fixed. Commercial rivalries appeared only on new markets resulting from the increase in global demand.

6. Oligopoly was thus not simply a market structure defined by the static conditions of concentration of supply. The maintenance of a concentrated supply in the face of a strongly growing demand implied investment strategies aimed at maintaining a dissuasive structural over-capacity in addition to short-term price regulation. What is more, the financial and technical barriers specific to this industry, maintained by the system of price adjustment, facilitated the access of already established producers to differential rents (see below). Oligopoly defined de facto an industrial *growth mode* in which the limitation of competition, i.e. the controlled anticipation of the structure of supply on the world scale, determined the production and development strategies of the mining and metallurgical companies.

7. During the 1960s and early 1970s, the political pressure of the host countries for controlling their mineral reserves and increasing their share of the mining rents increased the number of actors on mineral markets: host countries, commercial and international financial institutions, traders and metal consumers became more involved in new forms of mining investment. This proliferation of actors, combined with the slow-down in the growth of consumption in the mid-1970s, led in the early 1980s to the end of metal market regulation and of the oligopolistic growth mode of the mining industry.

B. Cyclicality and instability

8. During the 1980s, short term demand-supply adjustment has proved far more difficult to achieve:

- Between 1982 and 1987, the oversupply was progressively reduced under unprecedented price pressure,

- In 1987, the development of a slight under-capacity provoked an abrupt increase in metal prices, which remained at high levels until 1990,

- The 1991 recession combined with erratic exports from the former socialist bloc brought prices back to early 1980s levels.

C. New factors of competitiveness

9. In those unstable conditions the ability to keep cost levels low has become the essential factor of competitiveness. Unlike the oligopoly period, long-term market adjustment may not be achieved through the opening of a new marginal capacity but only through development or expansion of low-cost operations. While during the oligopoly period, a market leader could have considered the growth or the conservation of its market share as a strategic priority to ensure control of prices, since prices are out of control, it has become meaningless to base a strategy on maintaining a market share at any cost. An investment can be justified only if it allows the producer to improve its competitive position on the cost curve.

10. Without the producer price umbrella, mining rents have become more volatile and precarious. They can exist, in the long run, only if the producer is able to maintain his operation in the left portion of the industry cost curve.

III. THE EFFECT OF MINERAL RENTS ON MACROECONOMIC PARAMETERS [1]

A. Mining countries

11. "Mining countries" are those countries in which non-fuel mineral exports has accounted for more than 40 per cent of merchandise exports at least once since 1975. This criterion produces a sample of 16 developing countries with a relatively small population.[2] Figure 1 shows the share of minerals in mining countries' exports in comparison with more diversified large developing countries such as India or Brazil and mining-oriented industrialized countries such as Australia and South Africa, which also have a strong mining industry.[3] In the mining countries, the mining and mineral processing industry is of vital importance to the economy, not only because it contributes a large share of the import purchasing power but also because it is usually the largest and sometimes the only industrial employer in the country.

12. During the 1980s the mining countries experienced very severe recessions and a debt crisis. This is summarized in figure 2. Figure 3 shows that out of a sample of 15 mining countries, in 1975, 12 had a GDP per capita of over US$ 600 while all of them were over US$ 400 (constant 1987 dollars). Twelve years later, in 1987, only eight remained over US$ 600 and four had slipped under US$ 400. Meanwhile, debt ratios had increased tremendously: for several mining countries the ratio of total Debt Outstanding and Disbursed (DOD) to GDP more than doubled between 1982 and 1987, and for most of them DOD exceeded annual GDP in 1987.

B. The nature of mining rents

13. Mining countries differ from non-mineral economies in that the mining industry is characterized by the existence of a large element of rent. The concept of economic rent refers to the surplus earned by factors of production over and above the minimum earnings necessary to induce their employment. According to Ricardo, this surplus can be attributed to the fact that mineral commodities are sold on international markets at a price reflecting global supply-demand adjustment while their total production cost, including an average return on capital, corresponds to the quantity of factors needed to produce them. These costs depend on the choice of the techniques used to extract minerals and on the quality of the mineral deposit. Therefore, rent can be broken down into two components: one measured by the difference between prices and the total cost of the highest-cost marginal producer, and a second corresponding to cost differences among the producers. The first component, which is called "absolute" rent, is earned by every producer. This component can be zero or even negative if the costs

Figure 1. Nonfuel mineral commodity exports as a percentage of total exports for the mining countries and other selected states, 1976, 1982, and 1986.

Source: United Nations Conference on Trade and Development. *Handbook of International Trade and Development* (annual). Geneva.

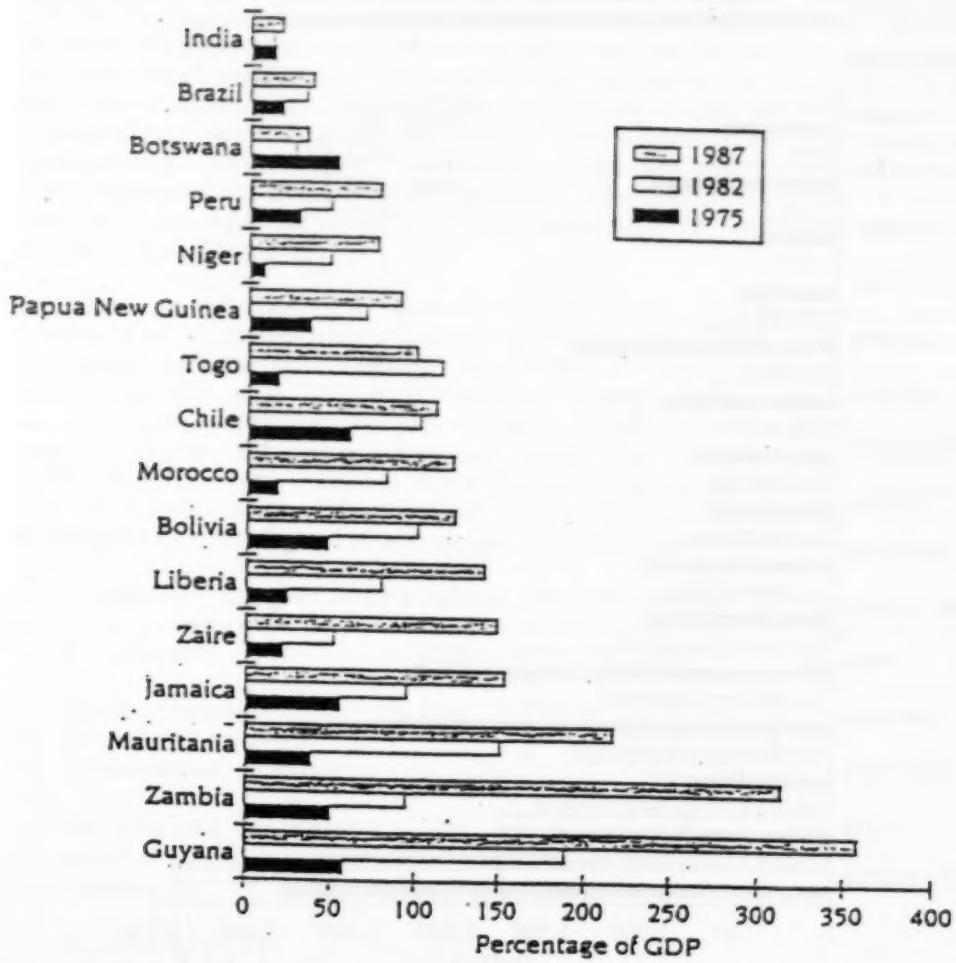

Figure 2. Foreign debt as a percentage of GDP for India, Brazil, and the mining countries, 1975, 1982, and 1987.
Sources: World Bank, *International Trade and Development Statistics* (annual); *World Debt Tables* (annual), Washington, D.C.

Figure 3. Per capita income for the mining countries and other selected states, 1975, 1982, and 1987 (in constant 1987 dollars).

Note: In a number of cases, the domestic currency was overvalued in the 1970s and undervalued in the 1980s relative to the dollar. This exaggerated the decline in per capita income expressed in dollars. Because of hyperinflation and a rapidly declining domestic currency, the exchange rate at the end of the year rather than the average for the year was used for Chile in 1982 and Peru in 1987.

Source: World Bank, *World Debt Tables* (annual), Washington, D.C.

of the marginal producer are equal to or greater than the market price. This phenomenon has become quite common since there are no longer producer prices to shelter marginal producers. The second component, the "differential rent", accrues only to the intra-marginal producers, that is those producers whose costs are below those of the highest-cost producer. Basically, differential rent is generated from the differences between natural resources: deposits with particularly high-grade ores or deposits that for other reasons are relatively inexpensive to exploit. However, the magnitude of the differential rent depends not only on the intrinsic quality or physical accessibility of the deposit but also on the industrial efficiency of the producer in exploiting it, or on the environmental constraints imposed by the local government. For instance, in countries imposing high environment protection standards, environmental costs can significantly reduce the gains resulting from the "natural" wealth of the mineral deposit. Environment costs which reflect how much nature is valued by the society in the area where the deposit is located depend mainly on political factors.

14.The rent can be measured by the difference between total production costs and mineral prices: in 1988 for instance, with an average price of copper of US$1.30 per pound, the mining rent accruing in the Chilean copper industry may be roughly estimated at 80 cents per pound of copper (US$ 2,900 million for the whole year) while it represented only 30 cents per pound in Zambia (US$350 million during the year).[4] As a marginal copper producer, the mining rent of Zambia was solely absolute rent liable to disappear completely as soon as the market turned down.

Table Competitive position of copper producers in 1988

Producer	USA	Chile	Zaïre	Zambia
Mine copper production (thousand tonnes)	1,438	1,451	471	450
Estimated average production cost (US¢/lb)	53	40	76	95
Productivity (tonnes of copper per man and per year)	60	43	13	7.5

Source: Estimate by Centre d'Economie des Ressources Naturelles

15. Mining rent may be seen as a kind of transfer from the consumer to the producer comparable from a macroeconomic point of *view to an economic surplus transferred into the country from* outside.[5] As already mentioned, this transfer also depends on the ability of the mining country to exploit efficiently its natural advantage. In this there is a major difference between oil-exporting countries and mining countries. Oil production

techniques are very similar and highly capital-intensive. Oil production costs always depend more on the quality of the deposit than on the operator's skill. Once a shaft is drilled, labour productivity in oil extraction is nearly the same worldwide. So the oil differential rent relies almost entirely on natural resources and international prices. Conversely, as shown in the table, labour productivity in the copper mining industry may vary by a factor of eight, a proportion not compensated by the existing difference in the cost of production factors.

16. The importance of efficient management to realize mineral rents is highlighted by cases in which the technical constraints of the exploitation are neglected in order to maximize the rent in the short term, thereby jeopardizing access to the deposits and sacrificing differential rent in the long run. In Gecamines, the Zairian state mining company, where the ore reserves are high-grade and should be mined at low cost, the deposits have been systematically "high-graded" during the last 20 years. As a consequence, access to the ore becomes more difficult every year. In September 1990, a major accident occurred in the Kamoto mine depriving the company of one-fourth of its production capacity. This accident largely resulted from dangerous but cheap mining methods. Furthermore, overburden removal in open pits has been so neglected that the workable surface in the pits is now too small. Copper production costs have escalated from 76¢/lb in 1988 to 99¢/lb in 1989 and, respectively, 135 and 140 ¢/lb in 1990 and 1991. Meanwhile, copper production has declined from about 420 thousand tons in 1989 to 220 thousand tons in 1991. For 1992 copper production was estimated at between 180 and 100 thousand tons. The reversal of this trend would be possible only if Gecamines could raise productivity so as to multiply the overburden removal by four.

17. Even when mining is in the hands of private firms and interests, government plays a critical role in the generation and use of mining rents. It creates the fiscal regime and mining legislation that shape the industrial organization of the mining sector and influence the magnitude of the rent. It defines the rules that govern how mining rents are allocated and controls the distribution of rents to the public sector.

C. The political economy of rent

Earlier studies

18. Two centuries after the Spanish conquest of the New World and the flow of gold into Europe that came in its wake, economists had already identified specific patterns associated with the absorption of mineral rents. Renewed interest in this topic arose during the 1960s as conflicts between mining companies and host Governments over the division of rents became widespread.

19. Although mining was widely recognized as a source of sectoral imbalance, it was generally accepted that mining rents could facilitate economic development by augmenting the stock of domestic capital (Hughes, 1975; Bosson and Varon, 1977).[6] This positive

view was tempered by the Prebisch and Singer thesis that the gains in productivity obtained in mining and other primary product production are largely passed on to the consumer in the form of lower prices, whereas the prices of the manufactured goods imported by the mineral exporting countries rise persistently. As a result, these countries suffer from secular deterioration in their terms of trade that retards economic growth.

20. The debate on the deterioration of the terms of trade of commodity exporting developing countries is far from settled.[7] The measurement of the real evolution of terms of trade between commodities and finished goods is highly problematic: even if one can prove that, during a given period, commodity prices have risen slower than the price of manufactured goods, it is probable that meanwhile, the quality of the finished goods has improved. Therefore the comparison will not apply to the same basket of products. Secondly, a deterioration of terms of trade would not, by itself, prove anything regarding the remuneration for production factors: such a concern should refer to the simultaneous evolution of costs and productivity. For that reason, some economists have tried to build a "double factorial terms of trade" indicator reflecting the evolution of the quantity of production factors contained in the different baskets of goods. The corresponding measurements are controversial for three reasons: first, account should be taken of the above mentioned change in the quality of the products chosen as a reference; secondly there is the question of the reliability of the measurement of production factors quantities; thirdly there is the question of the heterogeneity of the statistical sources used in various countries and especially in the third world.[8]

21. In 1979, the World Bank conducted the first empirical study of the mineral-exporting countries (Nankani,1979).[9] It found that the "non-fuel mineral economies" had enjoyed steady growth rates between the 1950s and the early 1970s, although the warning signs of pending trouble were already apparent. These countries suffered from (a) a technological and wage dualism, high unemployment rates and low school enrollment, (b) a weakening of the agricultural and manufacturing sectors, (c) a growing trade deficit coupled with a change in the structure of imports (more consumer goods and less equipment), (d) a steady increase in their budget deficit in spite of the importance of fiscal revenues, and (e) higher inflation rates than in the non mineral economies. The same study also highlighted the lack of linkages between the exporting sector and the rest of the economy and noted that the rents accruing to the Government bestowed on it a crucial economic role. The importance of reinvesting these rents was stressed, and Governments were advised to promote savings and investment outside the mining sector. Wages in the mining sector and the exchange rate were cited as the key variables in this process.

22. The need to control wages and the exchange rate and to manage the linkages between a booming mineral sector and the rest of the economy has been stressed by the Dutch Disease model which also appeared in the late 1970s (Catz,1977; Corden, 1982; Van Winbergen, 1984). Based on the experience of the Netherlands and its

production of natural gas, this macroeconomic model contends that foreign exchange inflows from the booming mineral export sector tend to raise the value of the domestic currency. In addition, the wages in the booming sector tend to increase, and these higher wages may spread to other economic sectors. The result is a loss of competitiveness for domestic producers outside the mineral sector.[10] According to the Dutch Disease model, however, the negative effects of a mineral boom can be reduced, or even avoided, if public policy keeps wages and the exchange rate from rising.[11] The problem is that in many countries, the political dynamics associated with the use of mineral rents make it difficult or impossible to institute such policies.

Rent-absorbing policies

23. Studies regarding the long-run economic history of mining countries reflect common patterns: first, the use of mining rents to avoid or postpone unpopular but needed structural adjustments in agriculture or other important economic sectors; secondly, the use of mining rents for economically unproductive welfare purposes; and thirdly, the use of rents in ways that increase dependence and vulnerability of the domestic economy in the face of external forces. Figure 4 synthesizes these mechanisms which are described below.

Avoiding structural adjustments

24. Quite often, structural imbalances in mining countries have stemmed from internal crises first affecting a major traditional production sector (agriculture, manufacturing or even, as in Chile in the 1920s, mining). There are many examples of economic difficulties faced by traditional production sectors being circumvented by new developments in the mining sector involving foreign investment or by an increase of the national share of the rent through mineral taxation. In the late 1940s, the import-substitution policy initiated by the Chilean government in the late 1930s had stalled. Production and productivity had stagnated and even declined, while the gap between domestic and world prices widened substantially. The government responded by raising the taxes on the mining companies controlled by United States corporations. Until 1955, when these corporations threatened to withdraw from Chile, rising mining rents financed subsidies for

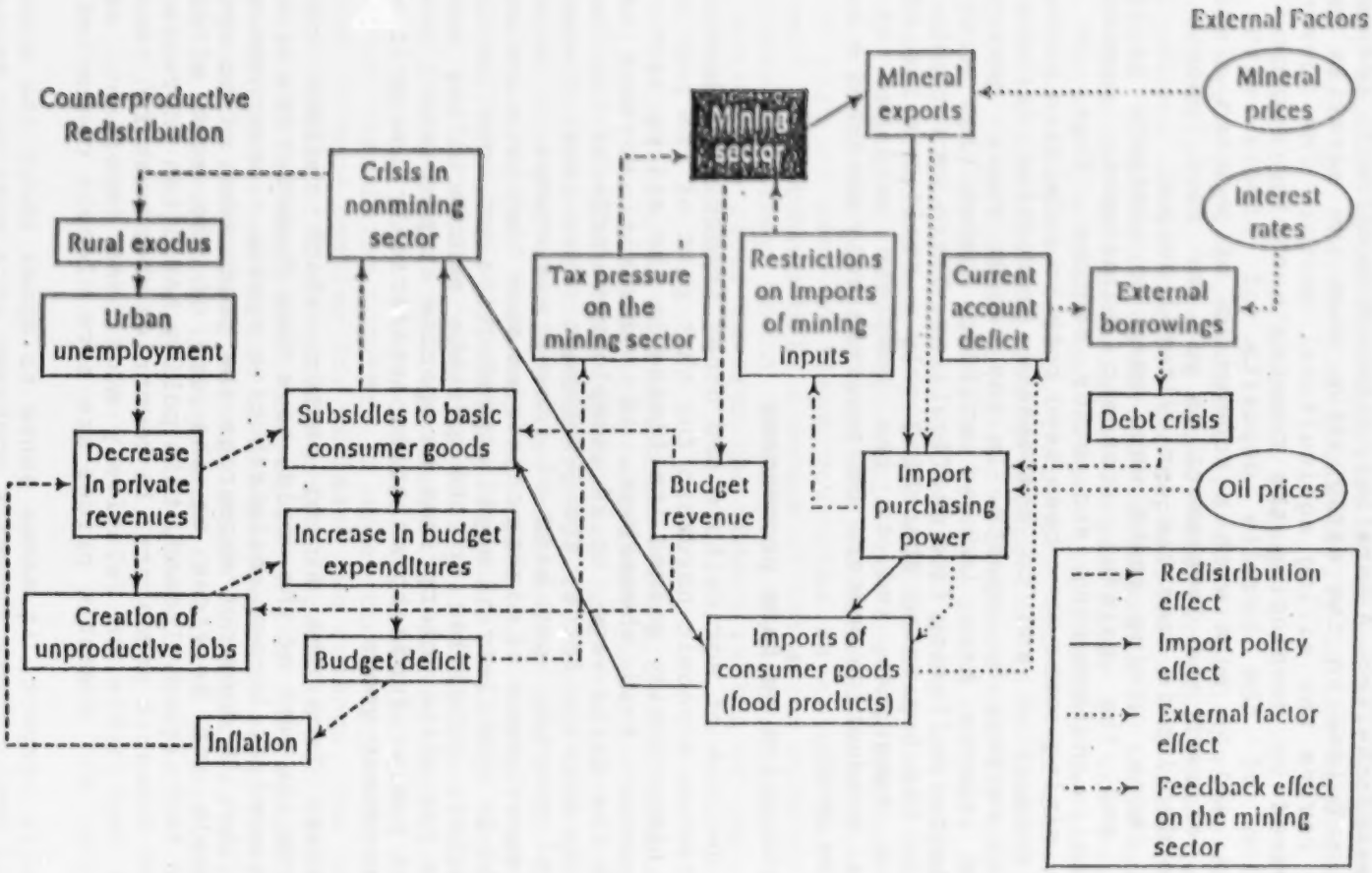

Figure 4. Economic dynamics of rent: a rent-earning sector financing structural imbalances.

domestic manufacturing. A parallel, although different, phenomenon occurred in Guinea in the early 1960s when the agrarian reform failed to revive the ailing agricultural sector. The Government then answered by developing the country's mining sector.[12] The exploitation of the bauxite deposits of Kindia with USSR assistance, and of Boke with a consortium of Western aluminium companies, allowed the Government to pay for food imports that offset the decline in domestic agricultural output.[13]. In these and other cases, mining rents were used to postpone political decisions and the painful economic adjustments needed in agriculture, manufacturing and other sectors. Thus, in many countries, mining rents have been used both to subsidize protected domestic production and to compensate production failures in unprotected sectors by imports. In the latter cases, government subsidized imports have induced stiffer competition with the domestic sector suffering from difficulties. These import policies, although in the beginning absorbing only a small portion of the rent, have sometimes led to the complete collapse of the traditional production sector, and progressively absorbed a larger part of the rent.

Unproductive welfare programmes

26. The decline of agriculture and other traditional productive sectors creates economic hardship for that part of the population which has historically gained its living in the ailing sector. If peasants cannot feed themselves, if industrial workers cannot survive on the going wage, or if unemployment affects too large a share of the working force, the government comes under tremendous pressure to provide some kind of income assistance to those in need. The experiences of mining countries show that this assistance is provided in a variety of ways: unproductive job creation in the public sector; subsidies to the private manufacturing sector; permission for state enterprises to operate at persistent losses; and use of public funds to maintain artificially low prices for imported consumer goods.

27. Revenues from the mining sector, which reflect capital inflows from the rest of the world, have thus financed the creation of an uneconomical income redistribution system - uneconomical in the sense that it does not encourage the production of an optimal mix of goods and services or the use of the most efficient production techniques. Indeed, this policy has often increased the problems of domestic producers. In countries where natural resource rents are negligible or relatively much less important, wages, productivity, and domestic prices are more closely connected.

28. In this respect, it makes sense to speak about the economic dynamics of rent. These dynamics contrast with post-war Keynesian dynamics in industrialized countries where the wage increases were counter-balanced by regular productivity increases. In these countries, the wage policy was aimed at setting up linkages between wages, productivity and prices, usually through contractual agreements with the labour unions.[14] In most mining countries before 1980, the core of the negotiation between the State and the unions was the extension of the income redistribution to the whole

society through general indexation of wages on the mining sector, rather than the increase of productivity in the mining sector.

Vulnerability to external forces

29. In many mining countries, the use of mining rents for welfare programmes, which, once in place, are very difficult to cut back or eliminate, has increased the dependence of the domestic economy on capital transfers from abroad. Governments' efforts are normally first directed at obtaining a larger share of the total mining rent. During the 1960s and 1970s, the conflict incited by these efforts deterred new foreign investment and led to nationalization and the withdrawal of foreign companies in a number of mining countries. In addition, Governments borrowed heavily abroad during the 1970s. The mining countries are now among the most indebted in the world. Thus, the use of mining rents to compensate for structural problems and to provide welfare assistance has left the mining countries more vulnerable to the vicissitudes of the international markets for capital and mineral commodities. It is ironic that so many of these countries have lost much of their economic independence only a decade or two after winning political independence. They would no doubt have performed better in redirecting the rents towards the modernization of their domestic non mineral sectors.

30. Furthermore, in some countries - Peru, Zaïre, Zambia, Liberia and Bolivia, for example - the relentless quest for new and greater transfers has ultimately threatened the viability of domestic mining. In spite of diminished profits, state enterprises have continued to pay the State an increasing share of their hard currency earnings. However, it would be overly simplistic to attribute the loss of competitiveness of the state mining enterprises in mining countries wholly to fiscal pressure. If this were so, one could just recommend to mining countries to cut mineral taxes, make macroeconomic adjustments and, eventually, privatize the mining industry in order to restore efficiency. The problem is more complex for at least two reasons: one is that the redistribution of the rent has created specific political patterns which should be analysed; the second is that the establishment of rent-earning States has led to the emergence of specific industrial organizations, the rent earning state enterprises, which cannot simply be restructured through what is called privatization.

IV. THE EFFECT OF MINERAL RENTS ON STATE AND INDUSTRY STRUCTURES[15]

A. Capitalist States

31. In the capitalist world, including colonial empires, priority has been given to the capital factor. In 1919, J.M. Keynes, probably the brightest theoretician on the nature of the capitalist state, described capitalist Europe before World War I, as "so organized socially and economically as to secure the maximum accumulation of capital".[16]

32. In the case of mining investments, the Ricardian theory of differential rent first justified the development of what we would now call "low cost deposits" by the comparative advantage they should give to their owners. However, Ricardo did not consider that a mineral deposit should be assimilated to a capital asset and therefore did not elaborate on the optimal time schedule of the exploitation, nor on the market value of a mineral deposit. In the twentieth century, as capital markets, including mining property rights, gained in sophistication, the Hotelling theory succeeded in assimilating the mineral deposit to a capital asset, and suggested that financially it could be handled as such, an approach adopted by capitalist firms to maximize returns on capital.[17]

33. State structures also progressively adapted in order to allow the capitalist logic to be pursued. Mining laws, fiscal rules, social regulations and recently environment protection measures have been designed to make return on capital in the mining industry compatible with society's constraints. Such processes apply, of course, not only to mining but to all economic activities. In the following sections, we will call "capitalist state", the state patterns resulting from this process.

B. Rent-earning States

34. In mineral exporting countries, the State is usually in a position to collect an important part of the mining rents and to redirect them into the economy. But rents do not derive from a purely domestic accumulation process; they are an external transfer paid to the country by the final consumer. As a consequence, there is no obligation for the State to "organize socially and economically (the country) as to secure the maximum accumulation of capital", at least, as long as there is a possibility to earn a rent. In those countries, the behaviour of the State towards the economy and the society differs from that of capitalist States. We will call these States rent-earning States.

35. Analyses of the political economy of rent in the mining countries have shown the dramatic magnitude of the counter-productive effects on the economy experienced by most of these countries and particularly the Subsaharan African ones: the non-productive redistribution of the rent, notably through public sector wages and subsidized consumer good imports, has ruined the traditional domestic sectors.[18] Therefore, the amount of transfers needed to sustain the economy has regularly increased during the

past 30 years. This explains the spectacular increase in mining countries' foreign debt between 1975 and 1987 (see figure 2).

36. In the case of African agriculture, the use of the rent as a way to postpone deciions on land or price reform by compensating the fall in production through imports, has also been a way to avoid questioning the social status of traditional chiefs in various regions. Instead, it has helped these local leaders to reinforce their power through subsidy or privilege allocation. Progressively, this clientelist logic, expanded countrywide, has jeopardized the production logic in the mines themselves.

37. Zaïre has probably been the most typical rent-earning State in Africa. The copper industry with an annual turnover of about US$ 1 billion per year has provided the State with huge revenues (US$ 4.2 billion of 1990 between 1980 and 1990). The diamond industry also provided a large mineral rent.

38. Besides these mineral rents, the Zaïrian state benefitted from a geopolitical windfall due to the United States and European policy in the area: Zaïre was the strategic point from which to control Angola in a South African region dominated by East-West rivalry. Capital flows encouraged by international financial institutions were progressively inflated and exceeded the mineral rent. This "geopolitical rent" was paid to make Zaïre a political client of the West; the rent was used to reinforce the domestic *clientele* network of the regime. The end of the Cold War and the collapse of the economy inducing the disorganisation of the mining industry have now drastically reduced the rent and led to the crumbling of the State.

C. The state enterprise problem

39. The role assigned to the State in the production system directly affects the structures under which production is organized. The specificity of capitalist countries is that a production unit can be identified by its capital. Therefore, a logic of capital accumulation can be defined, applied and sanctioned in the production sphere. In those countries, there is a political consensus that when the ownership of an enterprise is public, and even if there is some political interference with the company's management, production should be controlled under capitalist rules and social goals should be subordinated to the achievement of capital accumulation objectives. Conversely, it is accepted that a significant part of the profits should be socialized by the State through fiscal charges and public welfare.

40. There are a few capitalist countries whose economies strongly rely on mineral or other natural resource exports: Australia, Canada, South Africa. One could ask whether those countries should be considered as rent-earning States or not. Undoubtedly, natural resource rents play a major role in their economies and Dutch Disease patterns could be identified there. However, the essential point is that these countries have managed to allow the mining or other natural resource companies to hold capital which can be clearly identified. The government interferes with production only

through natural resource property rights and fiscal regulations. This scheme has two main characteristics:

- The management of the company should report, first of all, to the capital owner (who may be public),

- The State and the company are two separate entities able to negotiate the return on capital to the capital owner.

41. This is not the case in rent-earning States. The Copperbelt state mining companies are not managed through capital accumulation objectives. In his work on state mineral enterprises in developing countries,[19] Marian Radetzki points out that the way the State interferes with a state enterprise should be analysed through the concept of "control" rather than through capital ownership. However, this "control" concept is not quite clear. In capitalist countries, the State can efficiently bargain with mining companies without holding any share of their capital by setting the conditions for access to natural resources, taxation of profits and domestic employment and wage regulation. Control can then be achieved through external constraints on companies' behaviour. In rent-earning States, the domestic political network interferes directly with the state enterprise management. Radetzki insists on the existence of important social goals in third world mining companies, but suggests that because these goals increase production costs, they should progressively be supplanted by the capital rationality.[20] Under which conditions could this assessment be true?

42. Social entities such as Gecamines in Zaire or ZCCM in Zambia cannot simply be identified as "enterprises". These organizations guarantee living standards to large populations in a context where there are no state structures able to manage social utilities. They also run the local police and sometimes, military groups. For their employees and extended kin, these structures are the only ones capable of providing basic welfare services, often including food supplies: they are the only form of state available. These entities also overlap political party structures. Therefore, these local forms of state are not designed for developing local capitalism. They are the local form of the rent-earning state, e.g. the local agent in charge of the counter-productive redistribution: most of the consumption goods and social services (food, housing including sometimes furniture, medical care, school, urban and transport infrastructure) are provided on a non-monetary basis by the state-enterprise. In the African Copperbelt, most of these products are imported and distributed under conditions which do not allow the development of a competitive local supply but rather facilitate political "clientele" relationships. Clientelism is a kind of control which radically differs from capital ownership or from capitalist state regulation control. It is the way whereby the handful of people having access to the rent redistribute it so as to keep their position.

43. In the case of Gecamines, the problems that the state enterprise is now facing are connected with the rent-earning nature of the State: the wealth of the deposit and the flows of external

financing have allowed the government to keep its fiscal pressure on the mines without solving the real production problems. Poor results have been attributed to equipment shortages, so that advantage could be taken of the availability of Western credits for equipment purchases. Maintenance problems, which were the real cause of poor performance, have become more difficult as the amount of equipment has grown. At the same time, short-term production targets have been maintained although long-term access to the ore has been compromised.

44. Gecamines' creditors have widely debated whether the company should be privatized and give up its social duties. The argument is that, although hard to access, the deposits are rich; large industrial installations could be purchased cheaply, and theoretically, labour is not expensive. This approach is unrealistic. Production problems are closely connected with the destruction of the social infrastructure: as there is neither water nor medicines in the Kolwezi townships (250 000 population out of which 115 000 directly rely on Gecamines), Gecamines employees spend a large amount of their time in helping their large families to survive. It is impossible to expect from anyone to spend eight hours driving carefully a two-million dollar truck when there is no water at home and the children are ill. The social crisis directly affects the production sphere. There can be no increase of productivity in the mines as long as regional social problems are not tackled.

45. The rent earning state enterprises are the heritage of a paternalistic concept that involved designing a full social environment to ensure industrial production. In all industrialized countries, the development of capitalist production entailed a need to stabilize the workers at the mine or the plant: all the mines in Europe were developed together with social facilities enabling the mining company to keep its workers at work. But, in capitalist countries, the development of the national industrial production providing alternative budget revenues, allowed the progressive transfer to state bodies of the social facilities around the mine, and, in some cases, the industrial diversification of the mining region. In most mining countries, such a process has been jeopardized by the political economy of rent and by the rent-earning logic of the government.

46. Strong population growth and increased regional social needs not sustained by growing diversified production have led the old colonial enclave model to collapse. The national rent-earning State has not succeeded in building up a new industrial model in which diversified production and social responsibilities can be handled separately. A new model based on the separation of social and productive activities will require that a regional state body handle the social infrastructure smoothly. If it does not, workers will be unwilling to labour for wages, as in the West, but will insist on payment in food or some other necessity. The big issue is the political process by which a rent earning State of the type described above could be transformed into a capitalist State.

V. ISSUES

47. The mining countries have little choice but to keep international specialization in mining where they can gain from a natural advantage. Therefore, they should restructure their mining industry to move it competitive, and use their rents to promote productive diversification.

48. In terms of policy issues, the first result of this analysis shows that macro-economic adjustments such as reducing wages or adapting exchange rates do not constitute, by themselves, relevant recommendations. Such remedies have been widely offered to mining countries during the last 20 years while the Dutch Disease was growing worse. The need for restructuring concerns, in the first place, both the State and the micro level. The challenge for mining and, in particular, rent-earning countries is to build up capitalist states while separating, in the mining sector as in the rest of the economy, production from redistribution.

A. Restructuring the rent-earning State

49. In the twentieth century, the building of a modern State in capitalist countries has resulted from an institutionalization of a previous informal consensus into which "the capitalist classes were allowed to call the best part of the cake theirs and were theoretically free to consume it, on the tacit condition that they consumed very little in practice".[21] According to Keynes, the implementation of the welfare State through monetary policies was the only solution after World War I to keep a consensus by which labouring classes would accept to work and capitalist classes, confident in the future, would be ready to invest.

50. There are a few developing mining countries where capitalist logic has been tentatively preserved in the mining sector. Chile, which has a long mining history, is an interesting example. Without going into details, it may be assumed that there was a real risk that the mining sector would collapse when, in 1973, under the Allende Government, Chile faced a major crisis. The so-called Gran Mineria del Cobre had been developed by the United States mining companies under a colonial model comparable to Gecamines: the mines were designed with a full social environment ruled by the mining companies. In 1971, the Allende Government nationalized the mining sector. This process resulted in a greater confusion of production and social goals in the mining sector: between 1969 and 1974, employment in the mining sector rose by 50 per cent while labour productivity decreased by 20 per cent.[22]

51. Among the first actions taken by the Pinochet Government after the 1973 coup d'Etat, were political decisions aimed at restoring a capitalist logic in the mining sector in order to maximize, over the long term, the amount of rents to be transferred from the mining sector to the rest of the economy.

52. The early decision to suppress the institutional difference between blue collar and white collar wages (the ratio was 1:2) certainly played a major role in restoring productivity targets in

the mining sector: Codelco's production jumped from 682 thousand tons of copper in 1975 to 1001 thousand tons in 1983 as productivity increased by 40 per cent. Meanwhile, a large part of Codelco's social services were transferred to the State or to private companies. This policy, although it did not solve all Codelco's long-term management problems, proved to foreign investors that the Government was able to separate production from welfare. Chile has subsequently experienced the development of a competitive private mining sector, largely financed through foreign investment.[23]

53. The restructuring was possible because the Pinochet government did not have to account for its actions to democratically elected bodies. This example shows that the separation of production and social obligations can take place without parliamentary democracy. In fact, a democratic political system may facilitate the perpetuation of corporativistic or clientelist structures established in rent-earning States.

54. In 1993, two small groups of mining countries emerged from the list: those, like Zambia, which have started slow uncertain political processes for restructuring the former rent-earning states, and some others like Liberia or Zaïre, where the crumbling of the rent-earning State has not yet given birth to a new kind of State. There is a new research field open regarding the political conditions under which a constructive restructuring of rent-earning States could be possible.

B. From state enterprises to enterprises

55. If there is a political process aimed at restructuring the rent-earning State into a capitalist State, then the separation of production and welfare can be envisioned in the mining industry. This separation should deal with the following issues:

- The transfer to the *new State* of all the public services (medical care, education, police, army, transport, utilities, pensions etc.) which had been assumed by the state enterprise. The difficulty is to ensure that the new state bodies have both the technical skills and the financial means to assume these very crucial tasks;

- The restoration of a system of wages and prices allowing the monetarization of the services formerly produced by the state enterprise. In other words, it is necessary to create new local markets with decentralized supply. This point is also difficult because it provokes a radical change in wages and in workers' mentalities;

- The dividing of productive activities into subsets which can survive as independent enterprises, and eventually, be capitalized through private investment, whether domestic or foreign.

56. This process is not simple "privatization", e.g. a transfer of property from public ownership to private entrepreneurs.[24] It

is a wide and complex policy aimed at promoting industrial development. To attract capitalist investment, the conditions of the separation of production from other state burdens should be clear. It is only by rebuilding an independent social infrastructure that the State can guarantee the foreign investor that his future business will not be jeopardized by unbearable social constraints.

Notes

1. This section summarizes the main findings of our work included in Tilton (ed.) Mineral Wealth and Economic Development (1992).

2. Papua-New-Guinea, Peru, Bolivia, Chile, Jamaica, Guyana, Surinam, Morocco, Mauritania, Togo, Liberia, Guinea, Niger, Botswana, Zaïre, Zambia.

3. Although it is a mining country, Guinea is generally missing in the graphs because of the lack of public statistical information.

4. These figures correspond to the production costs and volumes gathered in the table, plus a 10 cents per pound return on capital in Chile compared to 5 cents per pound in Zambia (less capital-intensive).

5. Of course, such a transfer usually depends on the ability of the host country to collect the rent. If the country is not efficient in collecting the rent, then it may be diverted, for instance through transfer pricing.

6. See Helen Hughes, "Economic rents, the distribution of gains from mineral exploitation, and mineral development policy". World Development, Vol 3. N° 11 and 12. 1975. See also Bosson and Varon "Mining industry in the Third World", World Bank, Washington, 1977.

7. Grilly and Yang (88) who have built new price indexes for primary products and manufactured goods show an increase of relative prices of nonfuel minerals between the end of World War II and the early 1980s. See GRILLY and YANG, "Primary commodity prices, manufactured good prices, and the terms of trade of developing countries: what the long run shows", The World Bank Economic Review, volume 2, No. 1, January 1988.

8. For an in-depth discussion on this matter, see Pierre-Noël Giraud "L'Economie Mondiale des Matières Premières", La Découverte, Paris, 1989, pages 78-80.

9. This study compares the economic performances of two samples of mineral exporting countries (one including fuel mineral exporters, the other not) with a sample of non mineral economies. Mineral economies are defined as countries for which non-fuel minerals represented more than 40% of merchandise exports and 10% of GDP between 1967 and 1975. See G.NANKANI, "Development Problems of Mineral Exporting countries", World Bank Staff Working Paper n°354, Washington, 1979.

10. Among the first authors to introduce the concept was P. Catz "The Dutch Disease", Management Today, March 1977, p. 78-81. Numerous authors developed the concept during the 1980s, specially in the case of oil exporting countries. See notably: W-M Corden "Booming Sector and Deindustrialisation in a Small Open Economy", Economic Journal (UK), Vol.92 no 368, (24) December 1982 and S. Van-Wijnbergen "The Dutch disease: a disease after all?" Economic Journal (UK) Vol.94 no 373 pp: 233-250. May 1984.

11. A very clear description both of the emergence of the concept and its application to the case of mineral exporting countries is provided by Philip Daniel in "Economic Policy in Mineral Exporting Countries: What Have We Learned?", in Tilton, Mineral Wealth and Economic Development, Resources for the Future, 1992.

12. See Bomsel "Mine et développement: le cas de la Guinée", appendix to Chapter 10 in P.N. Giraud (83) Géopolitique des Ressources Minières, Economica, Paris.iraud

13. See also the detailed case study of Zambia by Bomsel in Tilton (92) pp. 67 to 72, op. cit.

14. See M. Aglietta, "Régulation et crises du capitalisme - l'expérience des Etats-Unis". Calmann-Lévy, 1976. See also Robert Boyer: "Formes d'organisation implicites à la théorie générale - Une interprétation de la crise des politiques keynesiennes". Paris, Decembre 1983. See also R. Boyer, "L'introduction du taylorisme en France à la lumière de recherches récentes",. Colloque international sur le Taylorisme, Université Paris XIII, May 1983.

15. This section refers to our recent work on the economic status of the State, published in Resources Policy (December 1992) under the title "Collapse of the State and competitiveness in mining: lessons from African and post-socialist countries".

16. J.M.Keynes "The economic consequences of peace", London, 1919. Royal Economic Edition 1971, page 11.

17. To be precise, the strength of the Hotelling approach does not rely on its ability to describe the mining companies' behaviour towards mineral exploration or exploitation, but on the theoretical hypothesis aimed at considering a mineral deposit as a capital asset and therefore, to justify a capitalist exploitation of natural resources. Were natural resources not comparable to capital, it would be difficult to specify the conditions under which their capitalist exploitation would lead to a social optimum.

18. See Tilton, "Mineral Wealth and Economic Development" Resources for the Future, 1992.

19. Marian Radetzki "State-Mineral Enterprises in developing countries: their impact on world markets." Resources for the Future, Washington, 1985. See the definition of the State enterprise on page 17.

20. "With time, as the government administrations learn to run mineral enterprises, they can be expected to influence an increasing number of functions and to change the goals and operating modes of the mineral activity towards the patterns typical of the experienced state-owned mineral firm." ..."The behavior of these enterprises (the latter) is very much like that of ordinary private enterprises". Radetzki, ibid, page 63.

21. Keynes, ibid, page 12. This statement apparently contradicts Marx's analysis about the hoarding tendency in a monetary economy. In fact, Keynes suggests that under the historical conditions of the late nineteenth century, the European bourgeoisie was induced to reinvest most of the profits on capital. His proposal concerning the welfare state may be interpreted as a way to prevent the "natural" tendency of capital hoarding denounced by Marx, under new historical conditions.

22. See O.Bomsel "Dynamique Economique des pays Miniers et Instabilité des Marchés de Matières Premières Minérales". PhD.thesis. Ecole des Mines de Paris. 1986. pp. 182-189.

23. It should be noted, though, that the Pinochet Government passed a decree that provides for 10 per cent of the total sales receipts of Codelco to be transferred annually to the Chilean Armed Forces for various purposes. The democratic government that succeeded the military regime has so far not attempted to change this provision.

24. The current debate on the so-called "privatization" of ZCCM illustrates of this point. The foreign investors cannot agree with Zambian authorities on what exactly should be privatized and under which conditions. See "Rift over ZCCM privatization" in Mining Journal of 29 January 1993.